In the Claims:

Please amend the claims as follows:

1. (Original) A leveling device comprising:

a platform defining an xz-plane;

a first dual bridge sensor coupled to said platform at an angle such that said first dual bridge sensor is sensitive to movement of said first dual bridge sensor in an xy-plane, said first dual bridge sensor comprising a first flexure plate generating a first dual bridge sensor signal in response to movement of said first flexure plate;

a second dual bridge sensor coupled to said platform at an angle such that said second dual bridge sensor is sensitive to movement of said second dual bridge sensor in said xy-plane, said second dual bridge sensor comprising a second flexure plate generating a second dual bridge sensor signal in response to movement of said second flexure plate; and

a processor driving said first dual bridge sensor and said second dual bridge sensor with a precision sine wave, said processor generating a platform control signal in response to said first dual bridge sensor signal and said second dual bridge sensor signal.

2. (Original) The system of claim 1, wherein said first dual bridge sensor and said second dual bridge sensor are equidistant from or a known variable distance from an intersection of said xy-plane and a yz-plane.

3. (Amended) The system of claim 1 further comprising a third dual bridge sensor coupled to said platform at an angle such that said third dual bridge sensor is sensitive to movement of said third dual bridge sensor in a yz-plane, said third dual bridge sensor

PAGE 3/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16

comprising a third flexure plate generating a third dual bridge sensor signal in response to movement of said third flexure plate, wherein said processor drives said third dual bridge sensor with said precision sine wave.

4. (Amended) The system of claim 3 further comprising a fourth dual bridge sensor coupled to said platform at an angle such that said fourth dual bridge sensor is sensitive to movement of said fourth dual bridge sensor in said yz-plane, said fourth dual bridge sensor comprising a fourth flexure plate generating a fourth dual bridge sensor signal in response to movement of said fourth flexure plate, wherein said processor drives said fourth dual bridge sensor with said precision sine wave.

5. (Amended) The system of claim 4, wherein said third dual bridge sensor and said fourth dual bridge sensor are equidistant from or a known variable distance from an intersection of an x-axis, a y-axis and a z-axis.

6. (Amended) The system of claim 4, wherein said processor receives said first dual bridge sensor signal, said second dual bridge sensor signal, said third dual bridge sensor signal and said fourth dual bridge sensor signal and generates said platform control signal in response thereto.

7. (Amended) The system of claim 6 further comprising a co-adder co-adding said first dual bridge sensor signal.

PAGE 4/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16

8. (Amended) The system of claim 1 further comprising a filter reducing noise in said ~~first digital word signal~~ first dual bridge sensor signal in a time domain.

9. (Amended) The system of claim 8, wherein said filter comprises a multi-pole filter.

10. (Original) A method for operating a leveling system comprising:

driving a first flexure plate dual bridge sensor with a first precision sine wave;

generating a first dual bridge sensor signal from said first flexure plate dual bridge sensor;

driving a second flexure plate dual bridge sensor with a second precision sine wave;

generating a second dual bridge sensor signal from said second flexure plate dual bridge sensor;

rotating a platform clockwise when said first dual bridge sensor signal is greater than said second dual bridge sensor signal;

rotating said platform counter-clockwise when said second dual bridge sensor signal is greater than said first dual bridge sensor signal;

driving a third flexure plate dual bridge sensor with a third precision sine wave;

generating a third dual bridge sensor signal from said third flexure plate dual bridge sensor;

PAGE 5/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16

driving a fourth flexure plate dual bridge sensor with a fourth precision sine wave;

generating a fourth dual bridge sensor signal from said fourth flexure plate dual bridge sensor;

rotating said platform clockwise when said third dual bridge sensor signal is greater than said fourth dual bridge sensor signal; and

rotating said platform counter-clockwise when said fourth dual bridge sensor signal is greater than said third dual bridge sensor signal.

11. (Original) The method of claim 10 further comprising calibrating the leveling system in relation to the earth by rotating the system about an x-axis or a z-axis.

12. (Original) The method of claim 10 further comprising calibrating the leveling system in relation to a rotation of the earth by rotating the system about a y-axis;

measuring effects of said rotation; and

calibrating said effects out of future leveling calculations.

13. (Original) The method of claim 10 further comprising generating a level acquired indicator signal, and locking said level acquired indicator signal as a reference plane.

14. (Amended) A leveling system for a missile system comprising:

an inertial measurement unit;

a platform coupled to said inertial measurement unit and defining an xz-plane;

PAGE 6/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16

a first flexure plate dual bridge sensor coupled to said platform at an angle such that said first flexure plate dual bridge sensor is sensitive to movement of said first flexure plate dual bridge sensor in an xy-plane, said first flexure plate dual bridge sensor ~~signal~~ driven by a precision sine wave, said first flexure plate dual bridge sensor comprising a first flexure plate generating a first accelerometer sine wave signal in response to movement of said first flexure plate;

a first set of synchronized sigma delta converters converting peaks of said first accelerometer sine wave signal from analog-to-digital and generating a first digital word signal therefrom;

a second flexure plate dual bridge sensor coupled to said platform at an angle such that said second flexure plate dual bridge sensor is sensitive to movement of said second flexure plate dual bridge sensor in said xy-plane, said second flexure plate dual bridge sensor ~~signal~~ driven by said precision sine wave, said second flexure plate dual bridge sensor comprising a second flexure plate generating a second accelerometer sine wave signal in response to movement of said second flexure plate;

a second set of synchronized sigma delta converters converting peaks of said second accelerometer sine wave signal from analog-to-digital and generating a second digital word signal therefrom;

a third flexure plate dual bridge sensor coupled to said platform at an angle such that said third flexure plate dual bridge sensor is sensitive to movement of said third dual bridge sensor in a yz-plane, said third flexure plate dual bridge sensor ~~signal~~ driven by said precision sine wave, said third flexure plate dual bridge sensor comprising a third flexure

PAGE 7/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16

plate generating a third accelerometer sine wave signal in response to movement of said third flexure plate;

a third set of synchronized sigma delta converters converting peaks of said third accelerometer sine wave signal from analog-to-digital and generating a third digital word signal therefrom;

a fourth flexure plate dual bridge sensor coupled to said platform at an angle such that said fourth flexure plate dual bridge sensor is sensitive to movement of said fourth dual bridge sensor in said yz-plane, said fourth flexure plate dual bridge sensor ~~signal~~ driven by said precision sine wave said fourth flexure plate dual bridge sensor comprising a fourth flexure plate generating a fourth accelerometer sine wave signal in response to movement of said fourth flexure plate;

a fourth set of synchronized sigma delta converters converting peaks of said fourth accelerometer sine wave signal from analog-to-digital and generating a fourth digital word signal therefrom;

an actuator activating an object control device in response to a platform control signal;

a processor receiving said first digital word signal, said second digital word signal, said third digital word signal and said fourth digital word signal and generating ~~a~~ said platform control signal in response thereto,

wherein said platform control signal comprises logic rotating said platform clockwise when said first ~~dual bridge sensor signal~~ digital word signal is greater than said second ~~dual bridge sensor signal~~ digital word signal, rotating said platform counter-clockwise when said second ~~dual bridge sensor signal~~ digital word signal is greater than said first ~~dual~~

PAGE 8/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16

~~bridge sensor signal~~ digital word signal, rotating said platform clockwise when said third ~~dual bridge sensor signal~~ digital word signal is greater than said fourth ~~dual bridge sensor signal~~ digital word signal, and rotating said platform counter-clockwise when said fourth ~~dual bridge sensor signal~~ digital word signal is greater than said third ~~dual bridge sensor signal~~ digital word signal.

15. (Amended) The system of claim 14 wherein said object control device comprises at least one of a thruster, an attitude control device, a missile steering nozzle, or a vane actuator.

16. (Amended) The system of claim 14, wherein said second and third flexure plate dual bridge sensors are arranged with said first flexure plate dual bridge sensor to receive cross axis thrust data.

17. (Amended) The system of claim 16 further comprising a filter reducing noise in said first digital word signal in a time domain.

18. (Amended) The system of claim 14 further comprising a co-adder co-adding said first ~~dual bridge sensor signal~~ digital word signal.

19. (Amended) The system of claim 14 further comprising a phase relation device receiving digital word signals from said set of ~~dual sigma~~ synchronized sigma delta converters, wherein a phase relation of an accelerometer signal from a first one of said set of

PAGE 9/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16

~~dual sigma~~ synchronized sigma delta convert rs with respect to a reference signal generated from a second one of said set of ~~dual sigma~~ synchronized sigma delta converters generates an indication of the acceleration direction, wherein said reference signal rectifies or demodulates peak signal conversions from said set of ~~dual sigma~~ synchronized sigma delta converters and generates a rectified signal therefrom, and wherein said phase relation device divides said rectified signal by a reference amplitude from said second one of said set of ~~dual sigma~~ synchronized sigma delta converters.

20. (Amended) The system of claim 16, wherein said processor calibrates the leveling system in relation to the earth by generating a rotation signal to rotate the leveling system about an x-axis or a z-axis, said processor further generating a signal to rotate the leveling system about a y-axis in response to a rotation of the earth, said processor further measuring effects of said rotation about said x-axis, said y-axis, or said z-axis, said processor still further calibrating said effects out of future leveling calculations.

21. (Amended) The system of claim 20, wherein said processor further generates a level acquired indicator signal in response to said first flexure plate dual bridge sensor, said second flexure plate dual bridge sensor, said third flexure plate dual bridge sensor, and said fourth flexure plate dual bridge sensor all equal, said processor further locking said level acquired indicator signal as a reference plane.

PAGE 10/24 * RCVD AT 6/23/2004 3:07:52 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/5 * DNIS:8729306 * CSID:248 2239522 * DURATION (mm-ss):05-16